

REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendment and the following remarks.

Claims 1-20 are pending in the present application and stand rejected. A corrected replacement claim 14 has been provided to correct an inadvertent error in the replacement version provided in Applicants' October 16, 2002 Amendment. The replacement claim 14 in the October 16, 2002 Amendment did not accurately reflect the amendment made to claim 14 therein. Applicants respectfully request that the Examiner substitute the corrected replacement claim 14 for pending claim 14. For the reasons stated below, Applicant respectfully submits that all claims pending in this application are in condition for allowance.

Paragraph 5 of the Office Action rejects claims 9-13 as allegedly being obvious in view of U.S. Patent No. 6,133,871 to Krasner ("Krasner"). Applicants respectfully traverse the rejection.

Claim 9 recites "storing a one millisecond segment of the GPS signal in a memory" and then performing the processing described in the remainder of the claim on the stored one millisecond segment. As described in column 12, lines 10-13, Krasner collects K PN frames of data for processing, where K is typically 100 to 1000 (corresponding to 100ms to 1 second of data). Nowhere, however, does Krasner teach or suggest the case where K is 1. In fact, Krasner expressly teaches away from K being 1 by reciting PN *frames*, using the term "frames" in the plural. In addition, Krasner explains that processing is of the signal in blocks of N consecutive PN frames. Thus, the processing loop shown in Figure 3 is performed "a total of K/N times for

each GPS signal to be processed.” (Krasner, col. 12, ll. 22-30), far more than the one millisecond segment recited in claim 9.

Further evidence that Krasner teaches away from processing only a one millisecond of data includes that the processing described in Krasner requires summing over multiple one-millisecond frames to increase processing gain due to the low signal-to-noise ratio of the received signals. (Krasner, col. 11, ll. 23-32., col. 12, ll. 41-46 and Figs. 4A and 4B). In addition, it is unlikely that significant Doppler effects will be observed in over a one millisecond portion of the data. As a result the Doppler processing required in Krasner (col. 14, ll. 13-43, Fig. 3, block 116) is not required for processing the one millisecond data segments recited in claim 9. Thus, those skilled in the art away would not recognize that Krasner applies to processing such a one millisecond segment of data. Lastly, Krasner himself failed to appreciate that his system could be used for a one millisecond segment of data. Despite the benefits alleged to be obvious to those skilled in the art in paragraph 5 of the Office Action, Krasner does not disclose, propose or otherwise suggest processing a one millisecond segment of data.

For at least the foregoing reasons, Applicants respectfully assert that Krasner neither teaches nor suggests processing a one millisecond segment of data as recited in claim 9. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 9 and its dependent claims 10-13.

Applicants provide additional remarks with respect to claim 12. Claim 12 recites “using a curve fitting routine to refine the location of the peak.” Applicants respectfully assert that nowhere does Krasner teach or suggest using a curve fitting routine to refine the location of the

peak. The cited portion of Krasner (col. 2, ll. 43-49) teaches acquiring the carrier frequency using FFT techniques, and then tracking using the determined carrier. However, the described carrier tracking does not "refine" the location of the peak. Rather, the carrier tracking follows the peak as it moves through time. Claim 12 on the other refines the location of the Gold code phase peak at the time of acquisition, not as it moves through time. Thus, Applicants respectfully assert that Krasner neither teaches nor suggests "using a curve fitting routine to refine the location of the peak" as recited in claim 12. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 12 for these independent reasons as well.

Paragraph 2 of the Office Action rejects claims 1-8 and 14-20 as allegedly being unpatentable under 35 U.S.C. § 103(a) over the combination of Krasner and U.S. Patent No. 5,450,617 to Moore ("Moore"). Applicants respectfully traverse the rejection.

Applicants respectfully assert that Krasner teaches away from the alleged combination. The Office Action provides as the motivation to combine the references that the combination "allows all major processing of the signals to take place in the received minimizing the dependence on outside components." Yet, this dependence on outside components is exactly what Krasner teaches as the preferred embodiment of the invention to avoid searching for Doppler. (Krasner col. 11, ll. 42-53; col.) As a result, Krasner teaches away from the alleged motivation to form the alleged combination with Moore. Consequently, Applicants respectfully assert that one skilled in the art would not be motivated to combine Krasner with Moore in the manner suggested in the Office Action.

Moreover, even assuming *arguendo*, that the requisite motivation to combine the references existed, Applicants respectfully assert that the combination does not teach or suggest the present invention as recited in claims 1, 6 and 14. Claim 1 recites "carrier frequency acquisition means for determining a carrier frequency associated with the downconverted GPS signal based on a height of the peak;" claim 6 recites "means for determining a carrier frequency using a height of the peak;" and claim 14 recites "determining a carrier frequency using the located peaks." The peaks are the correlation peaks resulting from correlating a received GPS signal with a Gold code. Applicants respectfully assert that the proposed combination of Krasner and Moore does not disclose the recited elements of claims 1, 6 or 14.

As explained in the Office Action, Krasner does not disclose means for determining the carrier frequency based on a height of the peak. Applicants respectfully assert that Moore does not teach or suggest such means either. Rather, to determine the carrier frequency, Moore samples the received carrier signal, performs an FFT on the sampled signal and then searches for a peak in the resulting FFT. (Moore, col. 9, ll. 18-32.) Thus, Moore looks for the carrier signal in an FFT of the carrier itself. Moore does not teach or suggest in any way looking for a peak in a correlation between a received signal and a stored signal as recited in claims 1, 6 and 14.

Because neither Krasner nor Moore, whether taken alone or in combination, teach or suggest the foregoing elements of claims 1, 6 and 14, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of these claims and their respective dependent claims 2-5, 7-8 and 15-20 set forth in paragraph 6 of the Office Action.

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In view of the foregoing all of the claims pending in this case are believed to be in condition for allowance. Should the Examiner have any questions or determine that any further action is desirable to place this application in even better condition for issue, the Examiner is encouraged to telephone applicants' undersigned representative at the number listed below.

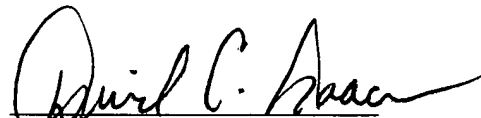
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